

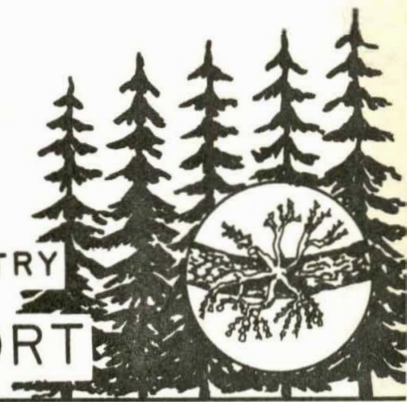


U.S. FOREST SERVICE

NORTHERN REGION

DIVISION OF STATE AND PRIVATE FORESTRY

INSECT AND DISEASE REPORT



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STATUS OF THE VARIABLE OAK LEAF CATERPILLAR IN NORTH DAKOTA - 1971

By

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The variable oak leaf caterpillar, Heterocampa mantee, was first reported in outbreak status in North Dakota in 1970 when hardwoods in the vicinity of Devil's Lake and the Killdeer Mountains were defoliated. Aerial and ground surveys of infested areas were made during the period September 7-10, 1971, in cooperation with W. J. Brandvik, Associate State Entomologist, North Dakota Department of Agriculture, to determine the status of these infestations in 1971.

SURVEY METHODS

Forested lands in the Killdeer Mountains, Saddle Buttes, Devil's Lake, and the Turtle Mountains were surveyed aerially and stands with noticeable defoliation were mapped (Fig. 1). Most feeding was complete at this time, and prepupal larvae were dropping to the litter to overwinter. Consequently, damage was at its peak level. Defoliated stands were ground checked to identify causal agents and host trees affected.

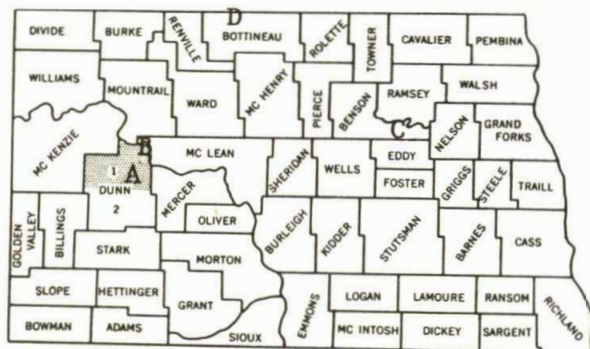


Figure 1.--Areas in North Dakota included in aerial survey of September 7-10.

- A = Killdeer Mountains
- B = Saddle Buttes
- C = Devil's Lake
- D = Turtle Mountains

RESULTS

A total of 2,760 acres of hardwood forests were defoliated in the Killdeer Mountains (Fig. 2). Defoliation ranged from "shothole" type feeding to complete stripping of the foliage. Paper birch, Betula papyrifera, was the favored species, and bur oak, Quercus macrocarpa, was also damaged. Green ash, Fraxinus pennsylvanica, which commonly occurs in the area, was not significantly damaged. The variable oak leaf caterpillar was the only defoliator collected in the area.

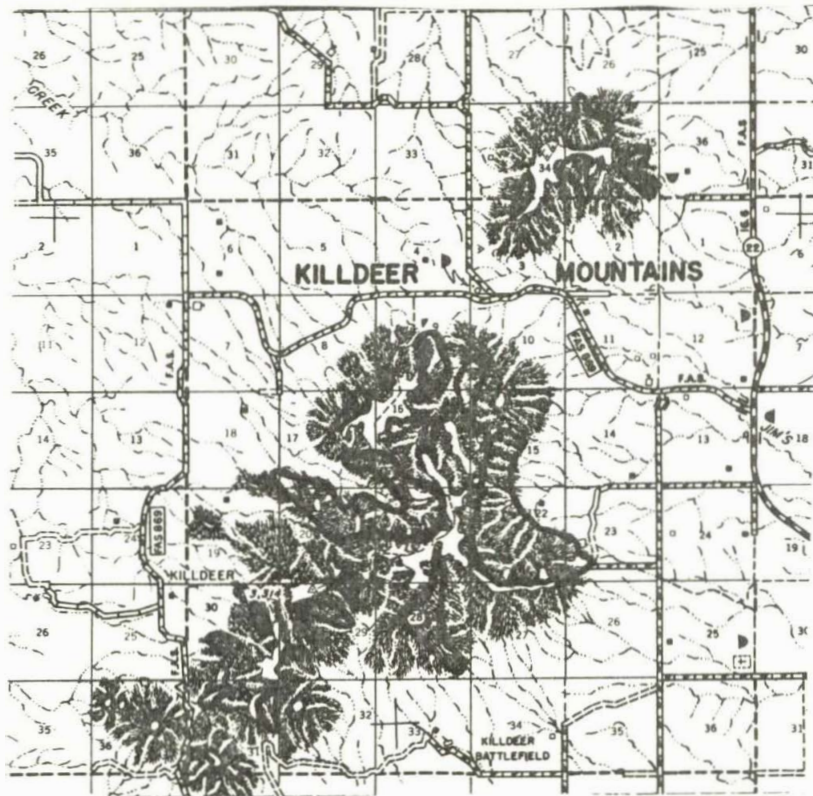


Figure 2.--Location of variable oak leaf caterpillar defoliation in the Killdeer Mountains. Scale: 1/2 inch = 1 mile.

Additional areas of defoliation were discovered in drainages immediately southwest of Skunk Creek and northwest of Saddle Buttes in Dunn County. Nine individual areas of defoliation, ranging in size from 80 to 280 acres, were detected for a total of 1,520 acres (Fig. 3).

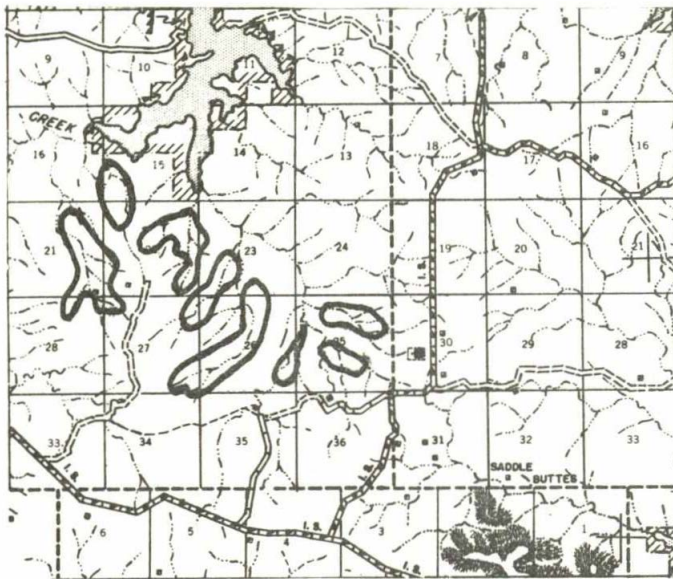


Figure 3.--Location of variable oak leaf caterpillar defoliation near Saddle Buttes. Scale: 1/2 inch = 1 mile.

A total of 1,750 acres of hardwood defoliation was mapped south of Devil's Lake. This includes 900 acres of private land in a marshy area along the lake's southwestern shore and 850 acres on the Sully's Hill National Game Preserve, Fort Totten Indian Reservation, and intermingled private lands (Fig. 4). American basswood, Tilia americana, was the preferred species in this area, and stands which contained a high proportion of this tree were heavily damaged. Species which suffered incidental feeding injury included American elm, Ulmus americana; box elder, Acer negundo; and bur oak. Green ash, which occurred in mixture with the basswood, was not damaged. The variable oak leaf caterpillar was the most common defoliator present, and the red-humped oak worm, Symmerista canicosta, and several species of tussock moth larvae were common associates.

No variable oak leaf caterpillar defoliation was detected in the Turtle Mountains; however, localized feeding injury on paper birch by the birch skeletonizer, Bucculatrix canadensisella, occurred near Lake Metigoshe.

DISCUSSION

Late summer defoliation, such as that caused by the variable oak leaf caterpillar, has little detrimental impact other than a temporary loss of scenic values. A portion of the area near Devil's Lake has also been infested by the forest tent caterpillar, Malacosoma disstria (Hubner), in recent years (Tunnock 1971)^{1/}. This insect, which removes foliage early in

^{1/} Tunnock, S. Evaluation of a forest tent caterpillar infestation near Devil's Lake, North Dakota. USDA Forest Service, Northern Region, Div. S&PF, Insect and Disease Report 71-10, 1971.

the growing season, is known to cause growth loss, top kill, and mortality after successive defoliations. The combined activity of the forest tent caterpillar and variable oak leaf caterpillar may have a detrimental effect on basswood and other hardwoods in the Devil's Lake area. This office will plan to monitor these infestations in 1972. No control action is recommended at this time.

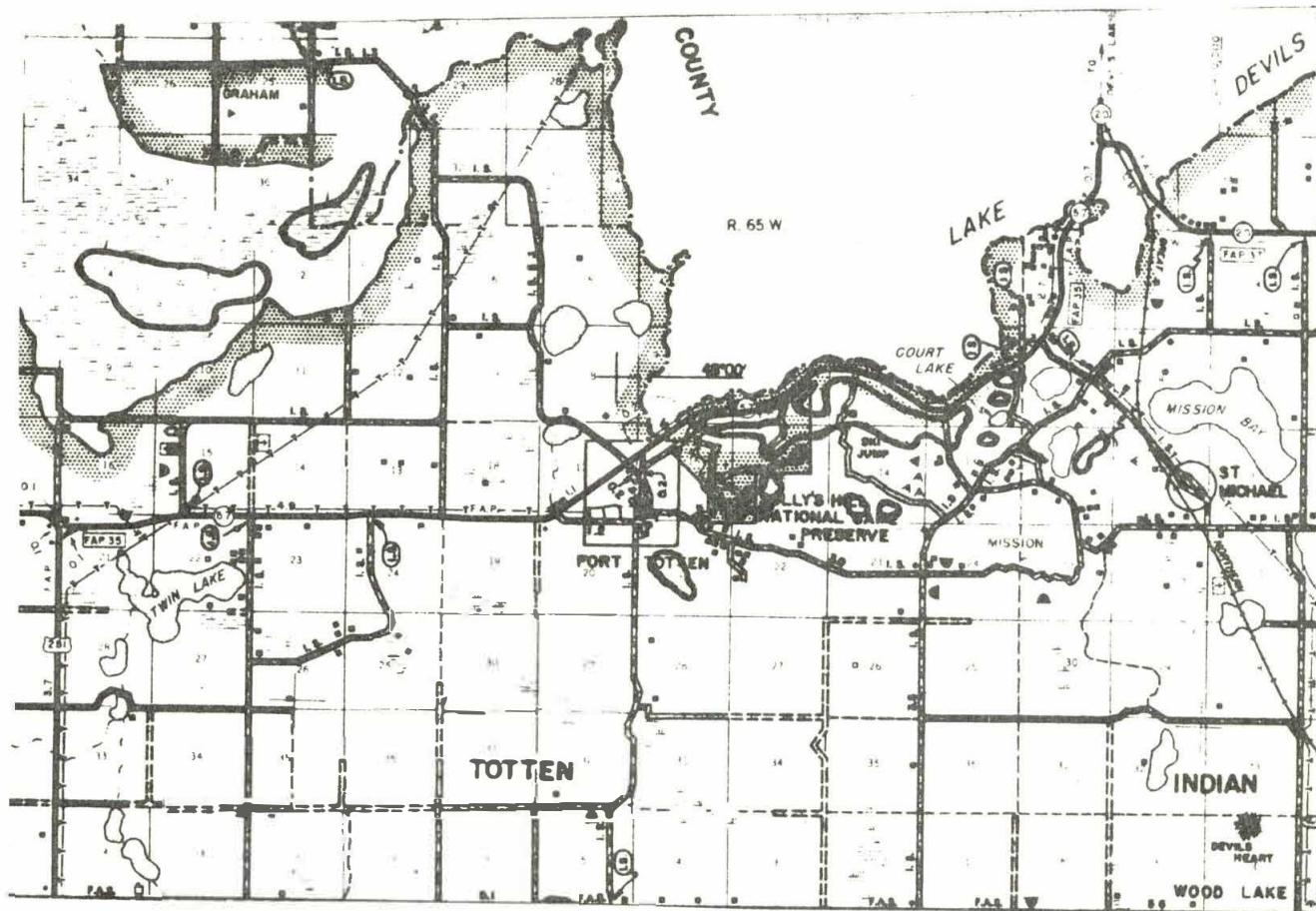


Figure 4.--Location of variable oak leaf caterpillar infestation near Devil's Lake. Scale: 1/2 inch = 1 mile.